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Date: 7/31/06 Signature: Michael Monaco
Attorney

To: Examiner: Thomas H. Stevens Telephone Number:

Group Art Unit: 2123

Facsimile No.: 571-273-3715

From: Michael E. Monaco Registration No.: 52,041

Telephone Number: 703-413-3000

Date: July 28, 2006

RE: U.S. Application Serial Number: 10/079,586

Filed: February 22, 2002

Attorney Docket Number: 219227US2CONT

TOTAL NUMBER OF PAGES INCLUDING THIS PAGE: 14

COMMENTS

In the event that any fees are due, including any fees required under 37 CFR 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge the required fees to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 CFR 1.136 for the necessary extension of time.

Docket N : 219227US

Applicant Initiated Interview Request Form

Application No.: 10/079,586 First Named Applicant: Tatsuo Yajima

Examiner: Thomas H. Stevens Art Unit: 2123 Status of Application: Pending

Tentative Participants:

(1) Michael E. Monaco (2) ______

(3) ______ (4) ______

Proposed Date of Interview: August 2, 2006 **Proposed Time:** 10:00 AM

(1) [ ] Telephonic (2) [X] Personal (3) [ ] Video Conference

Exhibit To Be Shown or Demonstrated: [ ] YES [ ] NO

If yes, provide brief description: ______

Issues To Be Discussed

	Issues (Rej., Obj., etc)	Claims/Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1)				[ ]	[ ]	[ ]
(2)				[ ]	[ ]	[ ]
(3)				[ ]	[ ]	[ ]
(4)				[ ]	[ ]	[ ]

[X] Proposed Amendment

Brief Description of Arguments to be Presented:

______

An interview was conducted on the above-identified application on ______.

NOTE:

This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible

(Applicant/Applicant's Representative Signature) (Examiner/SPE Signature)

I:\ATTY\MM\21's\219227US\219227US EXAMINER INTERVIEW REQUEST 7-28-06.DOC

DOCKET NO: 219227US2CONT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
TATSUO YAJIMA	: EXAMINER: STEVENS, T. H.
SERIAL NO: 10/079,586	:
FILED: FEBRUARY 22, 2002	: GROUP ART UNIT: 2123
FOR: METHOD FOR EVALUATING THE DYNAMIC PERSPECTIVE DISTORTION OF A TRANSPARENT BODY AND METHOD FOR SUPPORTING THE DESIGNING OF A THREE-DIMENSIONALLY CURVED SHAPE OF A TRANSPARENT BODY	:DRAFT DO NOT ENTER

AMENDMENT UNDER 37 C.F.R. § 1.116

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

In response to the Office Action dated June 2, 2006, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

the minimum value among the distance values is selected as the reference value, and the dynamic perspective distortion of the transparent body is evaluated based on the maximum value among the ratios of the distance values with respect to the minimum value.

Claim 4 (Canceled).

Claim 5 (Previously Presented): The computer-implemented method of Claim 1, wherein:

the transparent body is at least one selected from a glass sheet and a resinous plate.

Claim 6 (Previously Presented): The computer-implemented method of a transparent body according to Claim 1, wherein:

the image seen through the model of three-dimensionally curved shape of the transparent body is animation-displayed.

Claim 7 (Currently Amended): A computer-implemented method for correcting a three-dimensionally curved shape of a transparent body, comprising the steps of:

producing a model of three-dimensionally curved shape of a transparent body having a predetermined refractive index;

determining an eye point at a side of the model of three-dimensionally curved shape and a virtual evaluation pattern having a plurality of evaluation points at the other side of the model of three-dimensionally curved shape;

observing, from the eye point, the a virtual evaluation pattern through the transparent body, extracting perspective evaluation points as images of the evaluation points, obtained by observing through the transparent body, in a two-dimensional picture image obtained by the

observation, and obtaining a plurality of distance values between a plurality of adjacent perspective evaluation points;

determining a reference value, among the plurality of distance values;

evaluating the dynamic perspective distortion of the transparent body by obtaining ratios of each of the plurality of distance values to the reference value, and

correcting the three-dimensionally curved shape of the transparent body according to the evaluation, wherein

the virtual evaluation pattern is an orthogonal grid pattern, and

the dynamic perspective distortion of the transparent body is evaluated based on the rate of change of the ratios of the distance values to the reference value.

Claim 8 (Cancelled): .

Claim 9 (Previously Presented): The computer-implemented method of Claim 7, wherein:

the minimum value among the distance values is selected as the reference value, and the dynamic perspective distortion of the transparent body is evaluated based on the maximum value among the ratios of the distance values with respect to the minimum value.

Claim 10 (Canceled).

Claim 11 (Previously Presented): The computer-implemented method of Claim 7, wherein:

the transparent body is at least one selected from a glass sheet and a resinous plate.

Claim 12 (Previously Presented): The computer-implemented method of Claim 7, wherein:

the image seen through the model of three-dimensionally curved shape of the transparent body is animation-displayed.

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A computer-implemented method for evaluating dynamic perspective distortion of a transparent body comprising the steps of:

producing a model of three-dimensionally curved shape of a transparent body having a predetermined refractive index;

determining an eye point at a side of the model of three-dimensionally curved shape and a virtual evaluation pattern having a plurality of evaluation points at the other side of the model of three-dimensionally curved shape;

observing, from the eye point, the a virtual evaluation pattern through the transparent body, extracting perspective evaluation points as images of the evaluation points, obtained by observing through the transparent body, in a two-dimensional picture image obtained by the observation, and obtaining a plurality of distance values between a plurality of adjacent perspective evaluation points;

determining a reference value, among the plurality of distance values, and

evaluating the dynamic perspective distortion of the transparent body by obtaining ratios of each of the plurality of distance values to the reference value, wherein

the virtual evaluation pattern is an orthogonal grid pattern, and

the dynamic perspective distortion of the transparent body is evaluated based on the rate of change of the ratios of the distance values to the reference value.

Claim 2 (Cancelled): .

Claim 3 (Previously Presented): The computer-implemented method of to Claim 1, wherein:

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 3, 5-7, 9, and 11-12 are currently pending in the application, with Claims 2 and 8 cancelled and Claims 1 and 7 amended by the present amendment.

In the outstanding Official Action, Claim 1-3, 5-9 and 11-12 were rejected under 35 U.S.C. §102(b) as anticipated by Kurumisawa et al. "Development of an Optical Distortion Measuring Technique" (1999) (hereinafter "Kurumisawa").

Claims 1 and 7 are amended to recite the features of previously examined Claims 2 and 8, respectively. No new matter is added and no new issue is raised requiring further search or consideration. Thus, Applicants request this present amendment after final be entered.

Briefly recapitulating, independent Claim 1 is directed to a method for evaluating the dynamic perspective distortion of a transparent body by obtaining a plurality of distance values between adjacent perspective evaluation points and selecting a reference value from among the plurality of distance values. The dynamic perspective distortion of the transparent body is then evaluated by obtaining ratios of each of the plurality of distance values to the reference value.

Specifically, Claim 1 recites, *inter alia*, a method for evaluating the dynamic perspective distortion of a transparent body, comprising:

> "...obtaining a plurality of distance values between a plurality of adjacent perspective evaluation points;
> determining a ***reference value, among the plurality of distance values***, and
> evaluating the dynamic perspective distortion of the transparent body by ***obtaining ratios of each of the plurality of distance values to the reference value***...wherein
> ...the dynamic perspective distortion of the transparent body is evaluated ***based on the rate of change of the ratios of the distance values to the reference value***"

Independent Claim 7 recites substantially similar features, but is directed to a method for correcting a three-dimensional transparent body using steps similar to those recited in Claim 1.

Briefly summarizing, in a non-limiting exemplary embodiment, the grid distance ratio is a value obtained by dividing each of the plurality of grid distances by the same reference value in the row or column containing the grid distance. Thus, regardless of whether a series of grid distances are uniformly large or uniformly small across a plurality of grid points of the "orthogonal grid pattern," the grid distance ratio is represented as even or uniform indicating a low level of dynamic perspective distortion. Alternatively, when inspection is performed and a series of grid distances vary across a series of grid points of the "orthogonal grid pattern," the grid distance ratio is schematically represented as uneven indicating a high level of dynamic perspective distortion

When the dynamic perspective distortion is high, indicating a variation of grid distance values over a set of adjacent orthogonal grid pattern points, the human eye may detect a flicker. The claimed invention is developed to detect and eliminate this flicker effect by detecting and reducing the dynamic perspective distortion in a transparent body over a large range of evaluation points.

As described in Applicants' originally filed specification,[1] perspective distortion is classified into static perspective distortion and dynamic perspective distortion, the static perspective distortion being evaluated by seeing through a glass sheet with an inspector and the glass sheet being stationary, and the dynamic perspective distortion being evaluated by seeing through a glass sheet with an inspector and the glass sheet being moving.

Although it is ideal to evaluate dynamic perspective distortion by way of an inspector getting into an automobile and making a live evaluation (by viewing an object through a

[1] Specification, page 3, lines 3-9.

window glass of the automobile in a running state), it is not practical to design the shape of automobile window glasses with this type of inspection regime. It is not cost effective to make a glass sheet, install it, and then inspect it in a moving vehicle. It is more cost effective to evaluate a design before the glass is even produced. Thus, the present invention is directed to a method for easily evaluating the dynamic perspective distortion so as to optimally ***design*** the three-dimensional shape of a transparent body. Kurumisawa discloses a method for quantitatively evaluating the static perspective distortion of a produced glass sheet. In contrast, the present invention is directed to a method for evaluating a designed shape of a glass sheet. This evaluation may be made ***before*** (or after) the glass sheet has been produced.

Turning to the applied reference in detail, Kurumisawa describes a method for measuring the optical distortion of windshield glass by evaluating the contrast between a white and black checkered pattern image viewed through the glass.[2] Specifically, Kurumisawa describes that a focal plane shift may be detected at a single point by determining the contrast between a single white and black portion of the pattern.[3]

However, Kurumisawa fails to teach or suggest ***obtaining a plurality of distance values*** between adjacent perspective evaluation points, determining a ***reference value***, among the plurality of distance values, and ***evaluating the dynamic perspective distortion of the transparent body by obtaining ratios of each of the plurality distance values to the reference value***, as recited in independent Claim 1. Further, in Kurumisawa, it is possible to evaluate distortion only in a localized area, and not possible to make evaluation in a wide rage, such as vertical regions and lateral regions, as in the claimed invention.

As discussed above, Kurumisawa observes the contrast between a white and black part of the checkered pattern, and determines that a certain degree of distortion is present based on this observed contrast. As depicted in Fig. 5, and described at p. 300, col. 2, of

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[2] Kurumisawa, Abstract.
[3] Id., Fig. 5, p. 300, col. 2, lines 1-24.

Kurumisawa, a luminous intensity is determined at each white and black edge in the checkered pattern, and the contrast is defined as the variation in the luminous intensity detected at the edge (e.g., Contrast = $(I_{max} - I_{min})/(I_{max} + I_{min})$). Thus, Kurumisawa does not ***obtain a plurality of distance values between a plurality of adjacent perspective evaluation points***, whatsoever. Instead, Kurumisawa only describes that a difference in luminous intensity is determined to calculate a contrast value, which is analyzed to determine distortion.

Further, Kurumisawa fails to teach or suggest determining a ***reference value, among the plurality of distance values***, and evaluating the dynamic perspective distortion of the transparent body by ***obtaining ratios of each of the plurality of distance values to the reference value***. As noted above, Kurumisawa fails to teach or suggest obtaining a plurality of distance values between evaluation points. Additionally, the outstanding Official Action cites the value "I_{min}" as a reference value, and states that the equation used to calculate contrast in a single black/white intersection point is analogous to obtaining ratios of distance values to the reference value. However, as noted above, independent Claim 1 is amended to clearly recite that ***the reference value*** is determined ***among a plurality of distance values***, and that ***ratios of each of the plurality of distance values*** are obtained in relation ***to the reference value***. Thus, only one reference value from the plurality of distance values is used to calculate the ratios. In contrast, the equation to determine contrast in Kurumisawa describes only that a single black/white intersection is examined, not a plurality, and the reference value for that specific intersection is the minimum luminous intensity at that specific intersection. Thus, a plurality of black/white intersections are not calculated using the same reference value selected from a plurality of measured distance points, as recited amended independent Claim 1.

Generally, dynamic perspective distortion evaluates differences in images of the same object viewed through respective parts of a glass sheet, or otherwise stated, the dynamic perspective distortion evaluates the distortion of a glass sheet, detected by a driver or passenger when his or her view changes. It is impossible to evaluate dynamic perspective distortion based only on information on localized distortion of a glass sheet, as described in Kurumisawa, because even if a bad evaluation is locally obtained the dynamic perspective distortion over a larger area of the glass may not be poor because the distortion may be uniform, as discussed above.

Thus, in Kurumisawa, the distribution of distortion throughout a surface cannot be evaluated since only localized black/white intersections are evaluated using a contrast measurement which includes the minimum luminous value as the "reference value". Accordingly, the evaluation method according to Kurumisawa cannot determine whether a driver or a passenger feels the occurrence of dynamic perspective distortion when his or her view changes.

Furthermore, according to amended Claim 1, the dynamic perspective distortion is evaluated by obtaining a plurality of distance values between a plurality of adjacent perspective evaluation points, obtaining ratios of each of the plurality of distance values to a reference value among the plurality of distance values, and finding the rate of change of the ratios of the distance values to the reference value. Thus, it is possible to evaluate the dynamic perspective distortion in consideration of the continuity of the perspective distortion by finding the ratios of each of the plurality of distance values on a line. As the rate of change is larger, flickering in view of an object seen through a transparent body from a movable body is more easily to be realized. If a found rate of change is out of an acceptable range, it is necessary to modify the design of the glass shape.

The Official Action asserts that Fig. 5 in Kurumisawa discloses "the rate of change of the ratios of the distance values to the reference value". Applicants traverse. Fig. 5 in Kurumisawa shows a method for simply finding the difference between the maximum value and the minimum value of the contrast in one pitch having a predetermined size. With this method, the evaluation of the glass is made based on a finding that, as the perspective distortion is larger, a checkered pattern looks fuzzier, thus decreasing the difference between the maximum value and the minimum value of the contrast in one pitch. However, neither Figure 5 of Kurumisawa, nor any other portion of this reference, discloses or suggests evaluating a dynamic perspective distortion as is possible with the present invention. Kurumisawa makes only quantitative evaluation on the static perspective distortion, which has varied from person to person.

MPEP § 2131 notes that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also MPEP § 2131.02. "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Because Kurumisawa does not disclose or suggest all the features recited in Claims 1 and 7, Kurumisawa does not anticipate the invention recited in Claims 1 and 7, and all claims depending therefrom.

Accordingly, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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